<110> Andersson, Lief
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Guiffra, Elisabetta
Evans, Gary Jon
Wales, Richard
Plastow, Graham Stuart

<120> METHODS FOR ANALYSING ANIMAL PRODUCTS

<130> A33615 064727.0108

<140> 09/450,651
<141> 1999-11-30

<150> GB 9711214.8
<151> 1997-05-30

<150> GB 9801990
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<170> FastSEQ for Windows Version 4.0

<210> 1
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<400> 1
tgtaaaacga cggccagtrg tgcctggagg tgtccat 37

<210> 2
<211> 24
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<223> aMSHR Reverse Primer 5

<400> 2
cgcccagatg gccgcgatgg accg 24

<210> 3
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<220>
<223> aMSHR Forward Primer 2

<400> 3
cggccatctg ggcgggcagc gtgc 24

<210> 4

<211> 24
<212> DNA
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<220>
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<400> 4
ggaaggcgta gatgaggggg tcca 24

<210> 5
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<400> 5
gcacatcgcc cggctccaca agac 24

<210> 6
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<223> aMSHR Reverse Primer 3

<400> 6
ggggcagagg acgacgaggg agag 24

<210> 7
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<212> DNA
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<220>
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<222> (0)...(0)
<223> LA93 forward primer

<400> 7
gagcagcccc taccccggaa tgccagttga 30

<210> 8
<211> 40
<212> DNA
<213> Artificial Sequence

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<223> KIT56 reverse primer

<400> 8
ctttaaaaca gaacataaaa gcggaaacat catgcgaagg 40

<210> 9
<211> 24

<212> DNA
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cgcccagatg gccgcgatgg accg 24

<210> 10
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<400> 10
tgcgctacca cagcatcgtg accctgc 27

<210> 11
<211> 24
<212> DNA
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<220>
<223> aMSHR Reverse Primer 4

<400> 11
gtagtaggcg atgaagagcg tgct 24

<210> 12
<211> 22
<212> DNA
<213> Pig

<220>
<221> misc_feature
<222> (0)...(0)
<223> Example 6 forward primer

<400> 12
ctgcctggcc gtgtcggacc tg 22

<210> 13
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 6 reverse primer

<400> 13
ctgtggtagc gcagcgcgta gaag 24

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 7 primer

<400> 14
tgaggtagga gagttttggg 20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 7 primer

<400> 15
tcgaaattga ggggaagacc 20

<210> 16
<211> 22
<212> DNA
<213> Pig

<220>
<221> misc_feature
<222> (0)...(0)
<223> KIT21 forward primer

<400> 16
gtattcacag agacttggcg gc 22

<210> 17
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> KIT35 reverse primer

<400> 17
aaacctgcaa ggaaaatcct tcacgg 26

<210> 18
<211> 25
<212> DNA
<213> Pig

<220>
<221> misc_feature
<222> (0)...(0)
<223> Example 12 KIT forward primer

<400> 18
gaatattgtt gctatggtga tctcc 25

<210> 19
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Example 12 KIT reverse primer

<400> 19
ccgcttctgc gtgatcttcc tg 22

<210> 20
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 12 CRC forward primer

<400> 20
ctggatgtcc tgtgttccct gt 22

<210> 21
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 12 CRC reverse primer

<400> 21
aggtttgtct gcagcagaag ctc 23

<210> 22
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 14 KITDEL2-FOR forward primer

<400> 22
gaaagtgayg tctggtccta tsggat 26

<210> 23
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 14 KITDEL2-REV reverse primer

<400> 23
agccttcctt gatcatcttg tag 23

<210> 24
<211> 22
<212> DNA
<213> Pig

<220>
<221> misc_feature
<222> (0)...(0)
<223> Example 15 KITDEL1-FOR forward primer

<400> 24

tgtgggagct cttctcttta gg 22

<210> 25
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Example 15 KITDEL1-REV reverse primer

<400> 25
ccagcaggac aatgggaaca tct 23

<210> 26
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> KIT40 primer

<400> 26
ggctctgggg gctcggcttt gc 22

<210> 27
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> KIT22S primer

<400> 27
tcagacatct tcgtggacaa gcagagg 27

<210> 28
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Mouse/human derived KIT1F primer

<400> 28
tcrtacatag aaagagaygt gactc 25

<210> 29
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Mouse/human derived KIT7R primer

<400> 29
agccttcctt gatcatcttg tag 23

<210> 30
<211> 30
<212> DNA

<213> Pig

<220>
<221> misc_feature
<222> (0)...(0)
<223> E19FOR primer

<400> 30
gagcagcccc taccccggaa tgccagttga 30

<210> 31
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> E19REV primer

<400> 31
ctttaaaaca gaacataaaa gcggaaacat catgcgaagg 40

<210> 32
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> EPIG10 primer

<400> 32
ggtctagatc accaggagca ctgcagcacc 30

<210> 33
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> EPIG16 primer

<400> 33
gggaagcttg acccccgaga gcgacgcgcc 30

<210> 34
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> MC1R121A primer

<221> modified_base
<222> (1)...(1)
<223> hex dye

<400> 34
ggactccatg gagccgcaga tgagcacggt 30

<210> 35
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> EPIG13 primer

<400> 35
gcaagaccct ccaggaggtg 20

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> EPIG14 primer

<400> 36
cactgagccg tagaagagag 20

<210> 37
<211> 914
<212> DNA
<213> Pig (Wild boar)

<220>
<221> CDS
<222> (30)...(914)
<223> Wild boar aMSH-R

<400> 37
ctccctgctc cctgctccct ggcgggacg atg cct gtg ctt ggc ccg gag agg 53
Met Pro Val Leu Gly Pro Glu Arg
1 5

agg ctg ctg gct tcc ctc agc tcc gcg ccc cca gcc gcc ccc cgc ctc 101
Arg Leu Leu Ala Ser Leu Ser Ser Ala Pro Pro Ala Ala Pro Arg Leu
10 15 20

ggg ctg gcc gcc aac cag acc aac cag acg ggc ccc cag tgc ctg gag 149
Gly Leu Ala Ala Asn Gln Thr Asn Gln Thr Gly Pro Gln Cys Leu Glu
25 30 35 40

gtg tcc att ccc gac ggg ctc ttc ctc agc ctg ggg ctg gtg agc ctc 197
Val Ser Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu
45 50 55

gtg gag aac gtg ctg gtg gtg gcc gcc atc gcc aag aac cgc aac ctg 245
Val Glu Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu
60 65 70

cac tcg ccc atg tac tac ttc gtc tgc tgc ctg gcc gtg tcg gac ctg 293
His Ser Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu
75 80 85

ctg gtg agc gtg agc aac gtg ctg gag acg gcc gtg ctg ctg ctg ctg 341
Leu Val Ser Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu
90 95 100

gag gcg ggc gcc ctg gcc gcc cag gcc gcc gtg gtg cag cag ctg gac 389

```
Glu Ala Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp
105                 110                 115                 120

aat gtc atg gac gtg ctc atc tgc ggc tcc atg gtg tcc agc ctc tgc   437
Asn Val Met Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys
                125                 130                 135

ttc ctg ggc gcc atc gcc gtg gac cgc tac gtg tcc atc ttc tac gcg   485
Phe Leu Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala
            140                 145                 150

ctg cgc tac cac agc atc gtg acg ctg ccc cgc gcg ggg cgg gct atc   533
Leu Arg Tyr His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile
        155                 160                 165

gcg gcg atc tgg gcg ggc agc gtg ctc tcc agc acc ctc ttc atc gcc   581
Ala Ala Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala
    170                 175                 180

tac tac cac cac acg gcc gtc ctg ctg ggc ctc gtc agc ttc ttc gtg   629
Tyr Tyr His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val
185                 190                 195                 200

gcc atg ctg gcg ctc atg gcg gta ctg tac gtc cac atg ctg gcc cgg   677
Ala Met Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg
                205                 210                 215

gcc tgc cag cac ggc cgg cac atc gcc cgg ctc cac aag acg cag cac   725
Ala Cys Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His
            220                 225                 230

ccc acc cgc cag ggc tgc ggc ctc aag ggc gcg gcc acc ctc acc atc   773
Pro Thr Arg Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile
        235                 240                 245

ctg ctg ggc gtc ttc ctc ctc tgc tgg gca ccc ttc ttc ctg cac ctc   821
Leu Leu Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu
    250                 255                 260

tcc ctc gtc gtc ctc tgc ccc cag cac ccc acc tgc ggc tgc gtc ttc   869
Ser Leu Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe
265                 270                 275                 280

aag aac gtc aac ctc ttt ctg gcc ctc gtc atc tgc aac tcc atc       914
Lys Asn Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                285                 290                 295
```

<210> 38
<211> 914
<212> DNA
<213> Pig (Meishan)

<220>
<221> CDS
<222> (30)...(914)
<223> Meishan aMSH-R

<400> 38

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ctccctgctc cctgctccct ggcgggacg atg cct gtg ctt ggc ccg gag agg   53
                                  Met Pro Val Leu Gly Pro Glu Arg
                                   1               5

agg ctg ctg gct tcc ctc agc tcc gcg ccc cca gcc gcc ccc cgc ctc   101
Arg Leu Leu Ala Ser Leu Ser Ser Ala Pro Pro Ala Ala Pro Arg Leu
     10                  15                  20

ggg ctg gcc gcc aac cag acc aac cag acg ggc ccc cag tgc ctg gag   149
Gly Leu Ala Ala Asn Gln Thr Asn Gln Thr Gly Pro Gln Cys Leu Glu
 25                  30                  35                  40

gtg tcc att ccc gac ggg ctc ttc ctc agc ctg ggg ctg gtg agc ctc   197
Val Ser Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu
                 45                  50                  55

gtg gag aac gtg ctg gtg gtg gcc gcc atc gcc aag aac cgc aac ctg   245
Val Glu Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu
             60                  65                  70

cac tcg ccc atg tac tac ttc gtc tgc tgc ctg gcc gtg tcg gac ctg   293
His Ser Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu
         75                  80                  85

ctg gtg agc gtg agc aac atg ctg gag acg gcc gtg ctg ccg ctg ctg   341
Leu Val Ser Val Ser Asn Met Leu Glu Thr Ala Val Leu Pro Leu Leu
     90                  95                  100

gag gcg ggc gcc ctg gcc gcc cag gcc gcc gtg gtg cag cag ctg gac   389
Glu Ala Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp
105                 110                 115                 120

aac gtc atg gac gtg ctc atc tgc ggc tcc atg gtg tcc agc ctc tgc   437
Asn Val Met Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys
                125                 130                 135

ttc ctg ggc gcc atc gcc gtg gac cgc tac gtg tcc atc ttc tac gcg   485
Phe Leu Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala
            140                 145                 150

ctg cgc tac cac agc atc gtg acg ctg ccc cgc gcg ggg cgg gct atc   533
Leu Arg Tyr His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile
        155                 160                 165

gcg gcg atc tgg gcg ggc agc gtg ctc tcc agc acc ctc ttc atc gcc   581
Ala Ala Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala
    170                 175                 180

tac tac cac cac acg gcc gtc ctg ctg ggc ctc gtc agc ttc ttc gtg   629
Tyr Tyr His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val
185                 190                 195                 200

gcc atg ctg gcg ctc atg gcg gta ctg tac gtc cac atg ctg gcc cgg   677
Ala Met Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg
                205                 210                 215

gcc tgc cag cac ggc cgg cac atc gcc cgg ctc cac aag acg cag cac   725
Ala Cys Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His
            220                 225                 230
```

```
ccc acc cgc cag ggc tgc ggc ctc aag ggc gca gcc acc ctc acc atc   773
Pro Thr Arg Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile
        235                 240                 245

ctg ctg ggc gtc ttc ctc ctc tgc tgg gca ccc ttc ttc ctg cac ctc   821
Leu Leu Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu
    250                 255                 260

tcc ctc gtc gtc ctc tgc ccc cag cac ccc acc tgc ggc tgc gtc ttc   869
Ser Leu Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe
265                 270                 275                 280

aag aac gtc aac ctc ttt ctg gcc ctc gtc atc tgc aac tcc atc       914
Lys Asn Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                285                 290                 295
```

<210> 39
<211> 916
<212> DNA
<213> Pig (Pietrain)

<220>
<221> CDS
<222> (30)...(916)
<223> Pietrain aMSH-R

<400> 39

```
ctccctgctc cctgctccct ggcgggacg atg cct gtg ctt ggc ccg gag agg   53
                                  Met Pro Val Leu Gly Pro Glu Arg
                                   1               5

agg ctg ctg gct tcc ctc agc tcc gcg ccc cca gcc gcc ccc ccc gcc   101
Arg Leu Leu Ala Ser Leu Ser Ser Ala Pro Pro Ala Ala Pro Pro Ala
     10                  15                  20

tcg ggc tgg ccg cca acc aga cca acc aga cgg gcc ccc agt gcc tgg   149
Ser Gly Trp Pro Pro Thr Arg Pro Thr Arg Arg Ala Pro Ser Ala Trp
 25                  30                  35                  40

agg tgt cca ttc ccg acg ggc tct tcc tca gcc tgg ggc tgg tga gcc   197
Arg Cys Pro Phe Pro Thr Gly Ser Ser Ser Ala Trp Gly Trp  *  Ala
                 45                  50                  55

tcg tgg aga acg tgc tgg tgg tgg ccg cca tcg cca aga acc gca acc   245
Ser Trp Arg Thr Cys Trp Trp Trp Pro Pro Ser Pro Arg Thr Ala Thr
                 60                  65                  70

tgc act cgc cca tgt act act tcg tct gct gcc tgg ccg tgt cgg acc   293
Cys Thr Arg Pro Cys Thr Thr Ser Ser Ala Ala Trp Pro Cys Arg Thr
             75                  80                  85

tgc tgg tga gcg tga gca acg tgc tgg aga cgg ccg tgc tgc tgc tgc   341
Cys Trp  *  Ala  *  Ala Thr Cys Trp Arg Arg Pro Cys Cys Cys Cys
             90                  95                  100

tgg agg cgg gcg ccc tgg ccg ccc agg ccg ccg tgg tgc agc agc tgg   389
Trp Arg Arg Ala Pro Trp Pro Pro Arg Pro Pro Trp Cys Ser Ser Trp
            105                 110                 115
```

```
aca atg tca tga acg tgc tca tct gcg gct cca tgg tgt cca gcc tct   437
Thr Met Ser  *  Thr Cys Ser Ser Ala Ala Pro Trp Cys Pro Ala Ser
        120                 125                 130

gct tcc tgg gcg cca tcg ccg tgg acc gct acg tgt cca tct tct acg   485
Ala Ser Trp Ala Pro Ser Pro Trp Thr Ala Thr Cys Pro Ser Ser Thr
        135                 140                 145

cgc tgc gct acc aca gca tcg tga cgc tgc ccc gcg cgg ggc ggg cta   533
Arg Cys Ala Thr Thr Ala Ser  *  Arg Cys Pro Ala Arg Gly Gly Leu
    150                 155                 160

tcg cgg cga tct ggg cgg gca gcg tgc tct cca gca ccc tct tca tcg   581
Ser Arg Arg Ser Gly Arg Ala Ala Cys Ser Pro Ala Pro Ser Ser Ser
    165                 170                 175

cct act acc acc aca cgg ccg tcc tgc tgg gcc tcg tca gct tct tcg   629
Pro Thr Thr Thr Thr Arg Pro Ser Cys Trp Ala Ser Ser Ala Ser Ser
180                 185                 190                 195

tgg cca tgc tgg cgc tca tgg cgg tac tgt acg tcc aca tgc tgg ccc   677
Trp Pro Cys Trp Arg Ser Trp Arg Tyr Cys Thr Ser Thr Cys Trp Pro
                200                 205                 210

ggg cct gcc agc acg gcc ggc aca tcg ccc ggc tcc aca aga cgc agc   725
Gly Pro Ala Ser Thr Ala Gly Thr Ser Pro Gly Ser Thr Arg Arg Ser
            215                 220                 225

acc cca ccc gcc agg gct gcg gcc tca agg gcg cgg cca ccc tca cca   773
Thr Pro Pro Ala Arg Ala Ala Ala Ser Arg Ala Arg Pro Pro Ser Pro
        230                 235                 240

tcc tgc tgg gcg tct tcc tcc tct gct ggg cac cct tct tcc tgc acc   821
Ser Cys Trp Ala Ser Ser Ser Ser Ala Gly His Pro Ser Ser Cys Thr
    245                 250                 255

tct ccc tcg tcg tcc tct gcc ccc agc acc cca cct gcg gct gcg tct   869
Ser Pro Ser Ser Ser Ser Ala Pro Ser Thr Pro Pro Ala Ala Ala Ser
260                 265                 270                 275

tca aga acg tca acc tct ttc tgg ccc tcg tca tct gca act cca tc    916
Ser Arg Thr Ser Thr Ser Phe Trp Pro Ser Ser Ser Ala Thr Pro
            280                 285                 290
```

<210> 40
<211> 756
<212> DNA
<213> Pig (Largewhite)

<220>
<221> CDS
<222> (1)...(756)
<223> Largewhite aMSH-R

<400> 40

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ccc gac ggg ctc ttc ctc agc ctg ggg ctg gtg agc ctc gtg gag aac      48
Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu Asn
```

```
1               5                  10                  15

gtg ctg gtg gtg gcc gcc atc gcc aag aac cgc aac ctg cac tcg ccc      96
Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser Pro
            20                  25                  30

atg tac tac ttc gtc tgc tgc ctg gcc gtg tcg gac ctg ctg gtg agc     144
Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val Ser
        35                  40                  45

gtg agc aac gtg ctg gag acg gcc gtg ctg ctg ctg ctg gag gcg ggc     192
Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala Gly
    50                  55                  60

gcc ctg gcc gcc cag gcc gcc gtg gtg cag cag ctg gac aat gtc atg     240
Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val Met
65                  70                  75                  80

aac gtg ctc atc tgc ggc tcc atg gtg tcc agc ctc tgc ttc ctg ggc     288
Asn Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu Gly
                85                  90                  95

gcc atc gcc gtg gac cgc tac gtg tcc atc ttc tac gcg ctg cgc tac     336
Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg Tyr
            100                 105                 110

cac agc atc gtg acg ctg ccc cgc gcg ggg cgg gct atc gcg gcg atc     384
His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala Ile
        115                 120                 125

tgg gcg ggc agc gtg ctc tcc agc acc ctc ttc atc gcc tac tac cac     432
Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr His
    130                 135                 140

cac acg gcc gtc ctg ctg ggc ctc gtc agc ttc ttc gtg gcc atg ctg     480
His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met Leu
145                 150                 155                 160

gcg ctc atg gcg gta ctg tac gtc cac atg ctg gcc cgg gcc tgc cag     528
Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys Gln
                165                 170                 175

cac ggc cgg cac atc gcc cgg ctc cac aag acg cag cac ccc acc cgc     576
His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr Arg
            180                 185                 190

cag ggc tgc ggc ctc aag ggc gcg gcc acc ctc acc atc ctg ctg ggc     624
Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu Gly
        195                 200                 205

gtc ttc ctc ctc tgc tgg gca ccc ttc ttc ctg cac ctc tcc ctc gtc     672
Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu Val
    210                 215                 220

gtc ctc tgc ccc cag cac ccc acc tgc ggc tgc gtc ttc aag aac gtc     720
Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn Val
225                 230                 235                 240

aac ctc ttt ctg gcc ctc gtc atc tgc aac tcc atc                     756
Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
```

245 250

<210> 41
<211> 759
<212> DNA
<213> Pig (Hampshire)

<220>
<221> CDS
<222> (1)...(759)
<223> Hampshire aMSH-R

<400> 41

```
att ccc gac ggg ctc ttc ctc agc ctg ggg ctg gtg agc ctc gtg gag       48
Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu
 1               5                  10                  15

aac gtg ctg gtg gtg gcc gcc atc gcc aag aac cgc aac ctg cac tcg       96
Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser
            20                  25                  30

ccc atg tac tac ttc gtc tgc tgc ctg gcc gtg tcg gac ctg ctg gtg      144
Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val
        35                  40                  45

agc gtg agc aac gtg ctg gag acg gcc gtg ctg ctg ctg ctg gag gcg      192
Ser Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala
    50                  55                  60

ggc gcc ctg gcc gcc cag gcc gcc gtg gtg cag cag ctg gac aat gtc      240
Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val
65                  70                  75                  80

atg aac gtg ctc atc tgc ggc tcc atg gtg tcc agc ctc tgc ttc ctg      288
Met Asn Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu
                85                  90                  95

ggc gcc atc gcc gtg gac cgc tac gtg tcc atc ttc tac gcg ctg cgc      336
Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg
            100                 105                 110

tac cac agc atc gtg acg ctg ccc cgc gcg ggg cgg gct atc gcg gcg      384
Tyr His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala
        115                 120                 125

atc tgg gcg ggc agc gtg ctc tcc agc acc ctc ttc atc gcc tac tac      432
Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr
    130                 135                 140

cac cac acg gcc gtc ctg ctg ggc ctc gtc agc ttc ttc gtg gcc atg      480
His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met
145                 150                 155                 160

ctg gcg ctc atg gcg gta ctg tac gtc cac atg ctg gcc cgg gcc tgc      528
Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys
                165                 170                 175

cag cac ggc cgg cac atc gcc cgg ctc cac aag acg cag cac ccc acc      576
Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr
```

```
            180                 185                 190

cgc cag ggc tgc ggc ctc aag ggc gcg gcc acc ctc acc atc ctg ctg      624
Arg Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu
        195                 200                 205

ggc gtc ttc ctc ctc tgc tgg gca ccc ttc ttc ctg cac ctc tcc ctc      672
Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu
    210                 215                 220

gtc gtc ctc tgc ccc cag cac ccc acc tgc ggc tgc gtc ttc aag aac      720
Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn
225                 230                 235                 240

gtc aac ctc ttt ctg gcc ctc gtc atc tgc aac tcc atc                  759
Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250


<210> 42
<211> 759
<212> DNA
<213> Pig (Duroc)

<220>
<221> CDS
<222> (1)...(759)
<223> Duroc aMSH-R

<400> 42
att ccc gac ggg ctc ttc ctc agc ctg ggg ctg gtg agc ctc gtg gag       48
Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu
 1               5                  10                  15

aac gtg ctg gtg gtg gcc gcc atc gcc aag aac cgc aac ctg cac tcg       96
Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser
            20                  25                  30

ccc atg tac tac ttc gtc tgc tgc ctg gcc gtg tcg gac ctg ctg gtg      144
Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val
        35                  40                  45

agc gtg agc aac gtg ctg gag acg gcc gtg ctg ctg ctg ctg gag gcg      192
Ser Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala
    50                  55                  60

ggc gcc ctg gcc gcc cag gcc gcc gtg gtg cag cag ctg gac aat gtc      240
Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val
65                  70                  75                  80

atg gac gtg ctc atc tgc ggc tcc atg gtg tcc agc ctc tgc ttc ctg      288
Met Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu
                85                  90                  95

ggc gcc atc gcc gtg gac cgc tac gtg tcc atc ttc tac gcg ctg cgc      336
Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg
            100                 105                 110

tac cac agc atc gtg acg ctg ccc cgc gtg ggg cgg gct atc gcg gcg      384
Tyr His Ser Ile Val Thr Leu Pro Arg Val Gly Arg Ala Ile Ala Ala
```

```
        115                 120                 125

atc tgg gcg ggc agc gtg ctc tcc agc acc ctc ttc atc gcc tac tac      432
Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr
    130                 135                 140

cac cac acg gcc gtc ctg ctg ggc ctc gtc agc ttc ttc gtg gcc atg      480
His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met
145                 150                 155                 160

ctg gcg ctc atg gcg gta ctg tac gtc cac atg ctg gcc cgg gcc tgc      528
Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys
                165                 170                 175

cag cac ggc cgg cac atc gcc cgg ctc cac aag acg cag cac ccc acc      576
Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr
            180                 185                 190

cgc cag ggc tgc ggc ctc aag ggc acg gcc acc ctc acc atc ctg ctg      624
Arg Gln Gly Cys Gly Leu Lys Gly Thr Ala Thr Leu Thr Ile Leu Leu
        195                 200                 205

ggc gtc ttc ctc ctc tgc tgg gca ccc ttc ttc ctg cac ctc tcc ctc      672
Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu
    210                 215                 220

gtc gtc ctc tgc ccc cag cac ccc acc tgc ggc tgc gtc ttc aag aac      720
Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn
225                 230                 235                 240

gtc aac ctc ttt ctg gcc ctc gtc atc tgc aac tcc atc                  759
Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250
```

<210> 43
<211> 252
<212> PRT
<213> Pig (Wild boar)

<400> 43

```
Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu Asn
 1               5                  10                  15
Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser Pro
            20                  25                  30
Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val Ser
        35                  40                  45
Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala Gly
    50                  55                  60
Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val Met
65                  70                  75                  80
Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu Gly
                85                  90                  95
Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg Tyr
            100                 105                 110
His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala Ile
        115                 120                 125
Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr His
    130                 135                 140
His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met Leu
```

```
145                 150                 155                 160
Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys Gln
                165                 170                 175
His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr Arg
            180                 185                 190
Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu Gly
        195                 200                 205
Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu Val
    210                 215                 220
Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn Val
225                 230                 235                 240
Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250
```

<210> 44
<211> 252
<212> PRT
<213> Pig (Meishan)

<400> 44

```
Pro Asn Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu Asn
 1               5                  10                  15
Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser Pro
            20                  25                  30
Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val Ser
        35                  40                  45
Val Ser Asn Met Leu Glu Thr Ala Val Leu Pro Leu Leu Glu Ala Gly
    50                  55                  60
Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val Met
65                  70                  75                  80
Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu Gly
                85                  90                  95
Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg Tyr
            100                 105                 110
His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala Ile
        115                 120                 125
Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr His
    130                 135                 140
His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met Leu
145                 150                 155                 160
Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys Gln
                165                 170                 175
His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr Arg
            180                 185                 190
Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu Gly
        195                 200                 205
Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu Val
    210                 215                 220
Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn Val
225                 230                 235                 240
Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250
```

<210> 45
<211> 252
<212> PRT
<213> Pig (Largewhite)

<400> 45
Pro Asn Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu Asn
 1   5   10   15
Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser Pro
            20   25   30
Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val Ser
        35   40   45
Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala Gly
    50   55   60
Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val Met
65   70   75   80
Asn Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu Gly
                85   90   95
Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg Tyr
            100   105   110
His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala Ile
        115   120   125
Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr His
    130   135   140
His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met Leu
145   150   155   160
Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys Gln
                165   170   175
His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr Arg
            180   185   190
Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu Gly
        195   200   205
Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu Val
    210   215   220
Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn Val
225   230   235   240
Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245   250

<210> 46
<211> 253
<212> PRT
<213> Pig (Hampshire)

<400> 46
Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu
 1   5   10   15
Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser
            20   25   30
Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val
        35   40   45
Ser Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala
    50   55   60
Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val
65   70   75   80
Met Asn Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu
                85   90   95
Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg
            100   105   110
Tyr His Ser Ile Val Thr Leu Pro Arg Ala Gly Arg Ala Ile Ala Ala
        115   120   125
Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr
    130   135   140
His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met

```
145                 150                 155                 160
Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys
                165                 170                 175
Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr
            180                 185                 190
Arg Gln Gly Cys Gly Leu Lys Gly Ala Ala Thr Leu Thr Ile Leu Leu
        195                 200                 205
Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu
    210                 215                 220
Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn
225                 230                 235                 240
Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250
```

<210> 47
<211> 253
<212> PRT
<213> Pig (Duroc)

<400> 47

```
Ile Pro Asp Gly Leu Phe Leu Ser Leu Gly Leu Val Ser Leu Val Glu
 1               5                  10                  15
Asn Val Leu Val Val Ala Ala Ile Ala Lys Asn Arg Asn Leu His Ser
            20                  25                  30
Pro Met Tyr Tyr Phe Val Cys Cys Leu Ala Val Ser Asp Leu Leu Val
        35                  40                  45
Ser Val Ser Asn Val Leu Glu Thr Ala Val Leu Leu Leu Leu Glu Ala
    50                  55                  60
Gly Ala Leu Ala Ala Gln Ala Ala Val Val Gln Gln Leu Asp Asn Val
65                  70                  75                  80
Met Asp Val Leu Ile Cys Gly Ser Met Val Ser Ser Leu Cys Phe Leu
                85                  90                  95
Gly Ala Ile Ala Val Asp Arg Tyr Val Ser Ile Phe Tyr Ala Leu Arg
            100                 105                 110
Tyr His Ser Ile Val Thr Leu Pro Arg Val Gly Arg Ala Ile Ala Ala
        115                 120                 125
Ile Trp Ala Gly Ser Val Leu Ser Ser Thr Leu Phe Ile Ala Tyr Tyr
    130                 135                 140
His His Thr Ala Val Leu Leu Gly Leu Val Ser Phe Phe Val Ala Met
145                 150                 155                 160
Leu Ala Leu Met Ala Val Leu Tyr Val His Met Leu Ala Arg Ala Cys
                165                 170                 175
Gln His Gly Arg His Ile Ala Arg Leu His Lys Thr Gln His Pro Thr
            180                 185                 190
Arg Gln Gly Cys Gly Leu Lys Gly Thr Ala Thr Leu Thr Ile Leu Leu
        195                 200                 205
Gly Val Phe Leu Leu Cys Trp Ala Pro Phe Phe Leu His Leu Ser Leu
    210                 215                 220
Val Val Leu Cys Pro Gln His Pro Thr Cys Gly Cys Val Phe Lys Asn
225                 230                 235                 240
Val Asn Leu Phe Leu Ala Leu Val Ile Cys Asn Ser Ile
                245                 250
```

<210> 48
<211> 2919
<212> DNA
<213> Pig

<400> 48
atgagaggcg ctcgccgcgc ctgggatttt ctcttcgtcc tgcagctctt gcttcgcgtc 60
cagacaggct cttctcagcc atctgtgagt ccagaggaac tgtctccacc atccatccat 120
ccagcaaaat cagagttaat cgtcagtgct ggcgatgaga ttaggctgtt ctgcaccgat 180
ccaggatctg tcaaatggac ttttgagacc ctgggtcagc tgagtgagaa tacacacgca 240
gagtggatcg tggagaaagc agaggccatg aatacaggca attatacatg caccaatgaa 300
ggcggtttaa gcagttccat ttatgtgttt gttagagatc ctgagaagct tttcctcgtc 360
gaccctccct tgtatgggaa ggaggacaat gacgcgctgg tccgatgtcc tctgacggac 420
ccagaggtga ccaattactc cctcacgggc tgcgagggga aacccccttcc caaggatttg 480
accttcgtcg cggaccccaa ggccggcatc accatcagaa acgtgaagcg cgagtatcat 540
cggctctgtc tccactgctc cgccaaccag gggggcaagt ccgtgctgtc gaagaaattc 600
accctgaaag tgagggcagc catcagagct gtacctgttg tggctgtgtc caaagcaagc 660
taccttctca gggaagggga ggaatttgcc gtgatgtgct tgatcaaaga cgtgtctagt 720
tccgtggact ccatgtggat cagggagaac agccagacta aagcacaggt gaagaggaat 780
agctggcatc agggtgactt caattttctg cggcaggaaa ggctgacaat cagctcagca 840
agagttaatg attctggcgt gttcatgtgt tacgccaata atacttttgg atctgcaaat 900
gtcacaacca ccttagaagt agtagataaa ggattcatta atatcttccc tatgatgaat 960
accactgtgt ttgtaaacga tggagaggat gtggatctaa ttgttgagta cgaggcgtac 1020
cccaaacctg aacaccgaca gtggatatat atgaaccgca ctgccactga taagtgggag 1080
gattatccca agtctgagaa tgaaagtaac atcagatatg taagtgaact tcacttgacc 1140
agattaaaag ggaccgaagg aggcacttac acatttctcg tgtccaatgc tgatgtcaat 1200
tcttctgtga catttaatgt ttacgtgaac acaaaaccag aaatcctgac tcatgacagg 1260
ctcatgaacg gcatgctcca gtgtgtggcg gcaggcttcc cagagcccac catcgattgg 1320
tatttctgtc caggcaccga gcagagatgt tccgttcccg ttgggccagt ggacgtgcag 1380
atccaaaact catctgtatc accgtttgga aaactagtga ttcacagctc cattgattac 1440
agtgcattca aacacaacgg cacggtggag tgcagggctt acaacgatgt gggcaagagt 1500
tctgcctttt ttaactttgc atttaaagaa caaatccatg cccacaccct cttcacgcct 1560
ttgctgattg gttttgtgat cgcagcgggt atgatgtgta tcatcgtgat gattctcacc 1620
tataaatatc tacagaagcc catgtatgaa gtacagtgga aggttgtcga ggagataaat 1680
ggaaacaatt atgtctacat agacccaacg caacttcctt atgatcacaa atgggaattt 1740
cccaggaaca ggctgagttt tggcaaaacc ttgggtgctg gcgccttcgg gaaagtcgtt 1800
gaggccactg catacggctt aattaagtca gatgcggcca tgaccgttgc cgtgaagatg 1860
ctcaaaccaa gtgcccattt aacggaacga gaagccctaa tgtctgaact caaagtctta 1920
agttacctcg gtaatcacat gaatattgtg aatcttctcg gcgcctgcac cattggaggg 1980
cccaccctgg tcattacaga atattgttgc tatggtgatc tcctgaattt tttgagacgg 2040
aaacgtgatt cgtttatttg ctcaaagcag gaagatcacg cagaagcggc gctttataag 2100
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aaacccggag tgtcttatgt ggtaccaacc aaggcagaca aaaggagatc tgcgagaata 2220
ggctcataca tagaacgaga tgtgactcct gccatcatgg aagatgatga gttggcccta 2280
gacctggagg acttgctcag cttttcttac caagtggcaa agggcatggc cttcctcgcc 2340
tcgaagaatt gtattcacag agacttggcg gccagaaata tcctccttac tcatggtcga 2400
atcacaaaga tttgtgattt tggtctagcc agagacatca agaatgattc taattacgtg 2460
gtcaaaggaa acgctcggct acccgtgaag tggatggcac ctgagagcat tttcaactgt 2520
gtctacacat ttgaaagcga tgtctggtcc tatgggattt ttctgtggga gctcttctct 2580
ttagggagca gcccctaccc cggaatgcca gttgattcta aattctacaa gatgatcaag 2640
gagggtttcc gaatgctcag ccctgagcat gcacctgcgg aaatgtatga catcatgaag 2700
acttgctggg atgcggatcc cctcaaaaga ccaacgttta agcagatcgt gcagctgatt 2760
gagaagcaga tttcggagag caccaatcac atttattcca acttagcgaa ctgcagcccc 2820
caccgggaga accccgcggt ggatcattct gtgcggatca actccgtggg cagcagtgcc 2880
tcctccacgc agcctctgct tgtccacgaa gatgtctga 2919

<210> 49
<211> 434
<212> DNA
<213> Pig (Wild Boar)

<400> 49
ctgcagtgct cctggtgagg ggggacgggc gctggagcca ggctgcgggg ctgagggcag 60
tggtgccgtc ctgcggcccg gttcctacgt ggctgggcag ccccttggca gagaggacgg 120
gccggacatc tctgaaggta tggacgctgg accctctggg gcccgacaga ggaagagcca 180

gcacttccag gaggcatggg gagtggggga ggctggagag acggcgggga gcgccacctc 240
catccagaga ccaccacgcc cgcctttggg gcgcgctctg gggactttgc cccccactgg 300
ggtgggacgt gtgcgggcag aagctgtccg ggtgttgctc actgcaggac ctcaggggaa 360
ggccttcgtg actgctagga agcaggcgca gcgccccggc ggagggcggg gcccctctct 420
tctacggctc agtg 434

<210> 50
<211> 433
<212> DNA
<213> Pig (Meishan)

<400> 50
ctgcagtgct cctggtgagg ggggcgggcg ctggagccag gctgcggggc tgagggcagt 60
ggtgccgtcc tgcggcccgg ttcctacgtg gctgggcagc cccttggcag agaggacggg 120
ccggacatct ctgaaggtat ggacgctgga ccctctgggg cccgacagag gaagagccgg 180
cacttccagg aggcatgggg agtgggggag gctggagaga cggcggggag cgccacctcc 240
atccagagac caccacgccc gcctttgggg cgcgctctgg ggactttgcc ccccactggg 300
gtgggacgtg tgcgggcaga agctgtccgg gtgttgctca ctgcaggacc tcaggggaag 360
gccttcgtga ctgctaggaa gcaggcgcag cgccccggcg gagggcgggg cccctctctt 420
ctacggctca gtg 433

<210> 51
<211> 434
<212> DNA
<213> Pig (Hampshire)

<400> 51
ctgcagtgct cctggtgagg ggggacgggc gctggagcca ggctgcgggg ctgagggcag 60
tggtgccgtc ctgcggcccg gttcctacgt ggctgggcag cccttggca gagaggacgg 120
gccggacatc tctgaaggta tggacgctgg accctctggg gcccgacaga ggaagagccg 180
gcacttccag gaggcatggg gagtgggga ggctggagag acggcgggga gcgccacctc 240
catccagaga ccaccacgcc cgcctttggg gcgcgctctg gggactttgc cccccactgg 300
ggtgggacgt gtgcgggcag aagctgtccg ggtgttgctc actgcaggac ctcaggggaa 360
ggccttcgtg actgctagga agcaggcgca gcgccccggc ggagggcggg gcccctctct 420
tctacggctc agtg 434

<210> 52
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> E19PC oligonucleotide primer

<400> 52
catacatttc cgcaggtgca tgc 23

<210> 53
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> E19PT oligonucleotide primer

<400> 53
tcatacattt ccacaggtgc atgc 24